

CLAIMS

- 5 1. A method for manufacturing continuous material made of a copper-based metal alloy, according to which method the continuous material is treated at least in an oxide removal unit (3), where the oxides are removed from the continuous material surface by means of cathodic reduction, such as an anode (6), a cathode (5) and an electrolyte (11), **characterized** in that after the oxide removal unit (3), the continuous material made of a copper-based metal alloy is conducted into continuously operated extrusion treatment (4).
- 10 2. A method according to claim 1, **characterized** in that in cathodic reduction, the employed electrolyte (11) is sodium carbonate solution.
3. A method according to claim 1, **characterized** in that in cathodic reduction, the employed electrolyte (11) is sulfuric acid solution.
- 15 4. A method according to claim 1, 2 or 3, **characterized** in that in cathodic reduction, the employed cathode (5) is an object made of a copper-based metal alloy, and the employed anode (6) is a non-soluble material.
5. A method according to claim 4, **characterized** in that the employed anode (6) is a non-soluble material, such as platinum.
- 20 6. A method according to any of the preceding claims, **characterized** in that in cathodic reduction, on the anode (6) there is created oxygen and on the cathode (5) there is created copper.
7. A method according to claim 4, 5 or 6, **characterized** in that in connection with the anode (6), there is arranged at least one oxygen exhaust aperture (7) for enabling the exhaustion of oxygen.
- 25 8. A method according to any of the preceding claims, **characterized** in that in cathodic reduction, there is used an ion-selective membrane (8) that is impermeable to oxygen.

9. A method according to claim 8, **characterized** in that the membrane is placed between the anode and the cathode in order to prevent the oxygen from proceeding from the anode to the cathode.
- 5 10. A method according to claim 8 or 9, **characterized** in that the membrane (8) is arranged symmetrically around the cathode, so that it surrounds the whole cathode (5).
11. A method according to any of the preceding claims, **characterized** in that an object made of a copper-based metal alloy is subjected to a preliminary washing prior to the cathodic reduction.
- 10 12. A method according to any of the preceding claims, **characterized** in that an object made of a copper-based metal alloy is subjected to etching by sulfuric acid prior to the cathodic reduction.
13. A method according to claim 12, **characterized** in that sulfuric acid films are removed by mechanical drying.
- 15 14. A method according to any of the preceding claims, **characterized** in that after cathodic reduction, the object is subjected to a rapid pressurized water washing.
15. A method according to claim 14, **characterized** in that the oxide removal unit (3) and the working process (4) are insulated from the surroundings by protective gas.
- 20 16. An arrangement for realizing the method according to claim 1 for manufacturing continuous material made of a copper-based material, said arrangement comprising at least an oxide removal unit, **characterized** in that the arrangement includes elements for realizing a cathodic reduction, such as an anode (6), a cathode (5) and an electrolyte (11), so that the access of the gas created on the anode to the cathode is prevented by a membrane (8) that is impermeable to oxygen and means for continuously operated extrusion treatment (4).
- 25